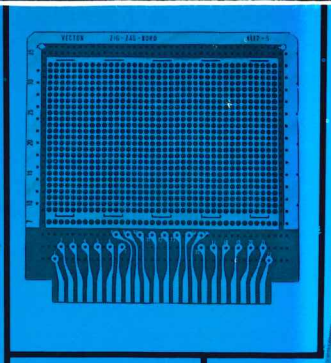

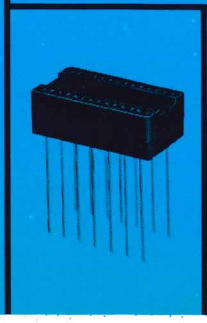

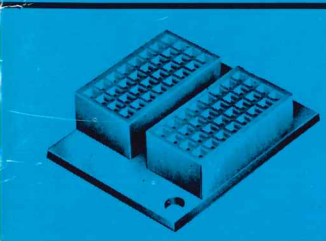

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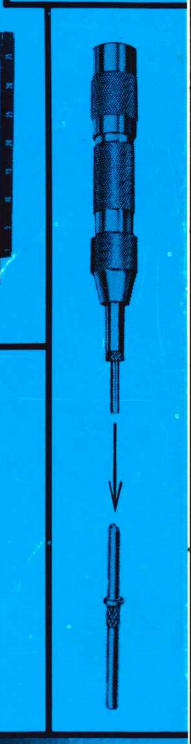
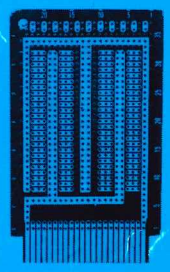
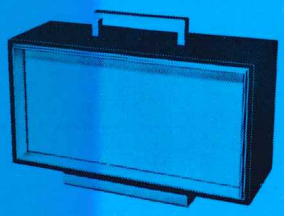
Vector







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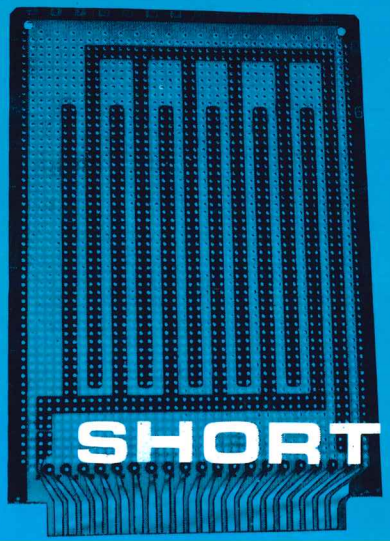


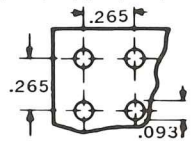
SHORT FORM CATALOG 77

VECTORBORD®—MICRO-VECTORBORD® PHOTO SENSITIZED BOARD

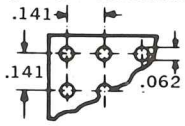
Vectorbord® and Micro-Vectorbord® prepunched terminal boards are time, work and money saving materials used throughout the electronic industry. Fire retardant material is precision punched in a wide variety of sizes, hole patterns, and thicknesses for later installation of terminals and components. Vector terminals in solder and wrapped wire models are available to fit all hole sizes. Pattern "A" or "AA" is good for experimental or other work where space is not critical. Pattern "B" is useful for work with small components such as resistors and capacitors. Pattern "G" is particularly useful for transistor usage. Patterns "H" and "P" are specially designed for use with integrated circuits and devices packaged with leads on 0.1 in. multiples.

Phenolic: MIL Spec PBE-P per MIL-P-3115 NEMA grade FR2. Copperclad phenolic meets NEMA FR2 and is 1 oz.
Paper Epoxy: MIL Spec P-22324 type PEE NEMA grade FR3. Copperclad FL-PX per MIL-P-13949E NEMA grade FR3.
Epoxy Glass: For 'P' pattern boards with 'WE' in suffix - Unclad: MIL Spec MIL-P181776 type GEE NEMA FR4 and G-10. Copperclad: MIL Spec 13949E type FL-GF NEMA grade FR4 and G-10. Color: green. Best mechanical characteristics. **For all other glass epoxy boards** - FR-4 type, max. temp. 130°C (266°F); color, blue; best hole quality in epoxy glass; can plate through holes in clad material.

Special sizes and hole layouts can be made to order if one of the standard catalog items does not meet requirements. When ordering special size boards the following MAXIMUM BOARD WIDTHS apply:
Pattern "A" in phenolic & epoxy paper or glass laminates: 20"
Pattern "B" all materials: 6"
Pattern "G" in phenolic & epoxy paper: 20". In epoxy glass: 16"
Pattern "H" in epoxy glass: 8.51" Pattern "P": 8.50"



PATTERN "A"



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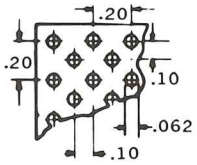
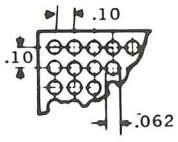
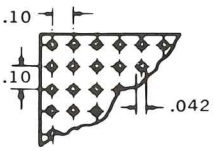


PATTERN "G"



PATTERN "H"

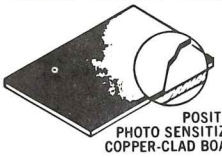


PATTERN "P"

Pattern	Material	Catalog No.	Length Inches	Width Inches	Thick. Inches	Copper Clad
A	Phenolic	18A18	4.80	4.80	1/16	None
		32A17	8.50	4.50	1/16	None
		32A18	8.51	4.80	1/16	None
		64A18	16.99	4.80	1/16	None
		72A32	19.11	8.51	1/16	None
		32AA9	8.51	2.41	3/32	None
		32AA18	8.51	4.80	3/32	None
		64AA18	16.99	4.80	3/32	None
		64AA32	16.99	8.51	3/32	None
		64AA132	35.01	16.99	3/32	None
	Epoxy Paper	32A17EP	8.50	4.50	1/16	None
		64A18EP	16.99	4.80	1/16	None
		32AA18EP	8.51	4.80	3/32	None
		64AA18EP	16.99	4.80	3/32	None
		64AA32EP	16.99	8.51	3/32	None
	Epoxy Glass	32A18WE	8.51	4.80	1/16	None
		64A18WE	16.99	4.80	1/16	None
B	Phenolic	45B30	8.51	5.69	1/16	None
		90B30	16.97	5.69	1/16	None
G	Phenolic	42G22	8.50	4.50	1/16	None
		42G24	8.51	4.80	1/16	None
		95G43	19.00	8.60	1/16	None
	Epoxy Paper	42G24EP	8.51	4.80	1/16	None
		85G24EP	16.99	4.80	1/16	None
		85G42EP	16.99	8.51	1/16	None
	Epoxy Glass	32G22WE	6.50	4.50	1/16	None
		42G22WE	8.50	4.50	1/16	None
		42G24WE	8.51	4.80	1/16	None
		42G42WE	8.51	8.51	1/16	None
		85G22WE	16.99	4.50	1/16	None
		85G24WE	16.99	4.80	1/16	None
		85G42WE	16.99	8.51	1/16	None
		175G22WE	35.00	4.50	1/16	None
		42G22WEC1	8.50	4.50	1/16	One Side
		42G22WEC2	8.50	4.50	1/16	Two Sides
H	Epoxy Glass	85H48WE	8.50	4.80	1/16	None
		85H85WE	8.51	8.51	1/16	None
		170H48WE	17.00	4.80	1/16	None
		170H48WE-032	17.00	4.80	1/32	None
		170H85WE	17.00	8.51	1/16	None

Pattern	Material	Catalog No.	Length Inches	Width Inches	Thick. Inches	Copper Clad
P	Epoxy Glass	29P29-062	3.00	3.00	1/16	None
		44P44-062	4.50	4.50	1/16	None
		44P29-062	4.50	3.00	1/16	None
		59P19-032	6.00	2.00	1/32	None
		59P44-032	6.00	4.50	1/32	None
		64P44-032	6.50	4.50	1/32	None
		64P44-062	6.50	4.50	1/16	None
		64P44-062WE	6.50	4.50	1/16	None
		84P44-062	8.50	4.50	1/16	None
		84P44-062WE	8.50	4.50	1/16	None
		95P44-062	9.60	4.50	1/16	None
		169P44-062	17.00	4.50	1/16	None
		169P44-062WE	17.00	4.50	1/16	None
		169P59-016	17.00	6.00	1/64	None
		169P59-032	17.00	6.00	1/32	None
		169P59-047	17.00	6.00	3/64	None
		169P79-062	17.00	8.00	1/16	None
		169P84-062	17.00	8.50	1/16	None
		169P84-062WE	17.00	8.50	1/16	None
		349 P44-062 \	35.00	4.50	1/16	None
		349 P84-062	35.00	8.50	1/16	None
		169P44-062C1	17.00	4.50	1/16	One Side
		169P44-062C1WE	17.00	4.50	1/16	One Side
		169P59-032C1	17.00	6.00	1/32	One Side
		169P84-062C1	17.00	8.50	1/16	One Side
		169P84-062C1WE	17.00	8.50	1/16	One Side
	Epoxy Paper	169P44-062C2	17.00	4.50	1/16	Two Sides
		169P84-062C2	17.00	8.50	1/16	Two Sides
		64P44-062EP	6.50	4.50	1/16	None
		84P44-062EP	8.50	4.50	1/16	None
		138P42-062EP	13.90	4.50	1/16	None
		169P44-062EP	17.00	4.50	1/16	None
		169P47-062EP	17.00	4.80	1/16	None
		169P84-062EP	17.00	8.50	1/16	None
		64P44-062EPC1	6.50	4.50	1/16	One Side
		169P44-062EPC1	17.00	4.50	1/16	One Side
		64P44-062EPC2	6.50	4.50	1/16	Two Sides
		169P44-062EPC2	17.00	4.50	1/16	Two Sides
	Phenolic	64P44-062XXXP	6.50	4.50	1/16	None
		169P44-062XXXP	17.00	4.50	1/16	None
		169P59-062XXXP	17.00	6.00	1/16	None

NEW — POSITIVE ACTING PHOTO SENSITIZED COPPER CLAD BOARD FOR FASTER, EASIER ETCHED CIRCUITS


POSITIVE PHOTO SENSITIZED COPPER-CLAD BOARD

32X-1 POSITIVE PHOTO RESIST KIT

New Vector positive acting coated photosensitized board speeds etched circuit manufacture because boards are coated with positive acting resist. Positive artwork is used for the circuit master pattern making use of readily available positive drafting aids. No reversing step required. A finished etched circuit can be made in less than an hour and boards etch in any common etchant. Vector postive acting developer must be used after exposure of the boards under U.V. light source such as a photo flood lamp or sunlight.

Kits 32X-1, 32XA-1 are recommended for trial evaluations of the system; later, purchase only boards and developer.

ORDERING INFORMATION

32X-1 Kit contains 1 bare and 1 sensitized 4½" x6½" I oz. c.c. 1 side 1/16 in. thick phenolic board, etching tray, ferric chloride etchant, developer, glass exposure plate, mask cutting film, tape, brush, razor knife, set of 4 sheets rub/transfer art work, layout paper, instruction sheets.

32XA-1 Kit has total of 7-1 oz. copper clad phenolic boards: 3 boards sensitized one side: 1-4½" x6½", 1-8.0" x5.1", 1-4.5" x 2.73"; 2 boards sensitized 2 sides: 1-4½" x6½", 1-4.5" x2.73"; 2 bare boards: 1-4½" x6½", 1-4.5" x2.7" plus larger assortment of rub/transfer art work, etching chemical, developer, and other materials described in 32X-1 kit above.

1/16" THICK POSITIVE ACTING PHOTOSENSITIZED BOARDS

Catalog No.	Description: Length	Description: Width	Description: Material	C. C Coating	Pkg. Quan.
CU90/80-1R	9	7.99	Phenolic	1 side	5
CU65/45-2R	6.5	4.5	Phenolic	2 sides	5
CU65/45-1R	6.5	4.5	Phenolic	1 side	5
CU45/27-1R	4.5	2.73	Phenolic	1 side	5
CU45/30WE-1R	4.5	3.0	Epoxy Glass	1 side	3
CU65/27WE-1R	6.5	2.73	Epoxy Glass	1 side	3
CU159/80WE-1R	15.85	7.98	Epoxy Glass	1 side	2

POSITIVE ACTING DEVELOPER

0088-21-15	1.25 oz. bottle
0088-21-45	6 oz. bottle

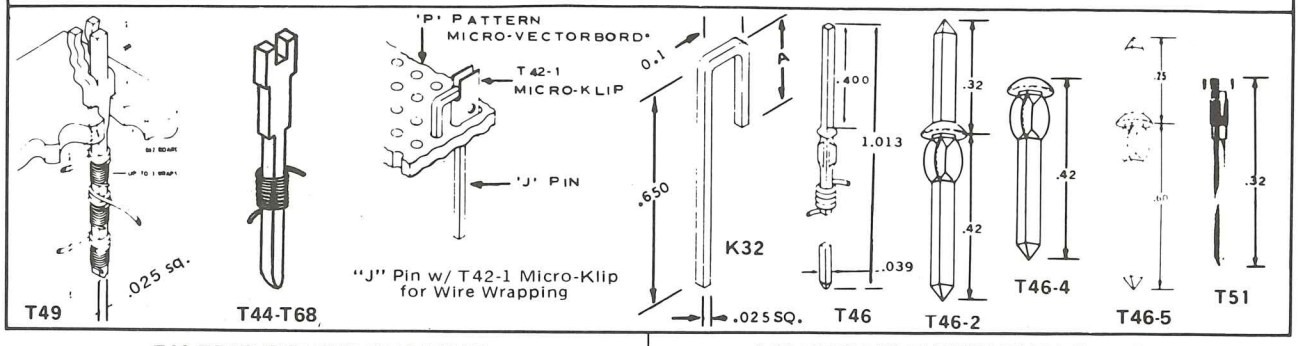
In the interest of improved design & performance, Vector reserves the right to make changes in its specifications without prior notice.

VECTOR ELECTRONIC COMPANY, INC. 12460 Gladstone Avenue, Sylmar CA 91342 Phone (213) 365-9661 TWX 910-496-1539

Vector WIRE WRAPPABLE – SOLDERABLE TERMINALS

WIRE WRAPPABLE TERMINALS AND PINS

Vector "wrap-post" terminals are stamped from high grade copper alloy and have sharp corners (maximum radius .003") for "gas-tight" connections when properly wrapped with Vector P160-4R Power Wrapper or other wrapping equipment. Like many other Vector terminals, wrap-post terminals may be installed in Vectorbord® with inexpensive hand tools. New gang insertion tools permit installing some models at rates up to 1200 per hour—write factory. **As a result of their unique board holding design, when properly installed, terminals hold tightly to meet all production requirements.** Wrap-post terminals may be installed wherever required without high cost machines. They are ideal for building sub-assembly production boards for later incorporation in larger assemblies Those with knurled or "stepped" shank designs may be used in plated-through holes.



T49 TRIFURCATED KLIP-WRAP

Unique three-fingered clip on upper end makes this a time-saving terminal for production or experimental uses. The spring clip holds leads from 0.018" to 0.025", 0.032" or 0.040" until soldered. Hand Insertion Tool P156 is adequate for installing a few at a time, but Spring Impact Tool P158 and D-8 Die Point are recommended for larger quantity installation due to the speed and ease of use.

T44-T68 MINIWRAP FOR 0.042 HOLES

Low profile wire wrappable terminals have slotted upper end for soldered wires. Ideal for miniature assemblies.

K32 "J" PIN FOR 0.042 HOLES

Lowest cost wrappable terminal. May be used alone in circuit board hole by inserting into two adjacent 0.028" to 0.042" dia. holes and bending shorter leg over for retention. Hooked end can also be embedded in encapsulated assemblies and wraps made on protruding tail. Illustration also shows terminal being used to provide wire wrappable extension tail to T42-1, a solderable Micro-Klip terminal.

T46 MINIWRAP - 0.028" SQ.

Sturdy double ended terminal fits 0.042" dia. holes. Has flanged mid-section.

STAR SERIES T46-2, -3, -4, -5 - 0.025" SQ.

This 0.025" sq. double ended terminal stands rigid in 0.042" holes without wobble due to four protrusions on the terminal corners in the terminal midsection. It is ideal for printed circuit applications because the seating flange creates a natural solder fillet bonding point.

T51 SERIES

Lowest profile rounded head is low enough to fit beneath installed DIP packages. Head diameter is .072" and may be used as a solder point for wave or "tack" soldering.

ORDERING INFORMATION

Supplied in Pkg. 100 or 1000

Part No./Plating Tin	Gold	Tail Lgth. Below 1/16" Bd.	Hand Insertion Tool	P158 Tool w/ Die Point:	Install in Hole Dia.
T49	T49A	.560	P156	D-8	.042
T49-1	T49A-1	.388	P156	D-8	.042

Catalog No. Tin	Nickel/Gold	Overall Hght	Slot Width	Slot Depth	Hand Install Tool
T44	T44-1	.690	.021	.055	A13
T68	T68-1	.800	.032	.090	A13-1
T68A	T68A-1	.630	.032	.090	A13-1

Part No.	Dimension "A"	Insertion Tool	For Staking-- P158 Tool Plus:	Install in Hole Dia.
K32	.250"	Not Required	Not Applicable	.028" min.
K32-2	.170"		D-14 Die; A-14 Anvil	.028" min.
K32-3	.140"		D-14 Die; A-14 Anvil	.028" min.

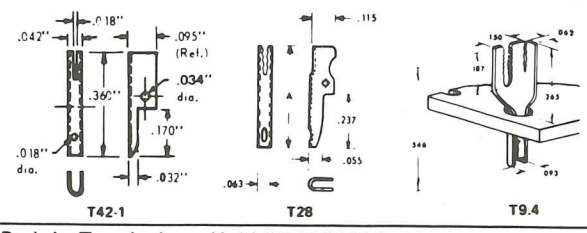
Part No./Plating Tin	Gold	O/A Lgth.	Hgt. Above Board	Lgth. Below 1/16" Board
T46	T46-1	1.013	.40	.950
T46-2	T46-2A	.74	.32	.358
T46-3	T46-3A	1.02	.42	.538
T46-4	T46-4A	.42	.03	.358
T46-5	T46-5A	.85	.25	.540

For T46-1: Order P158 Tool w/D7-1 Die Pt. or P133A Hand Tool. For T46-2, -3, -5 order P133B Hand Tool. For T46-4 order D10 Die Pt. or P133B Hand Tool.

Part No.	Material	For Hole Dia.	O/A Lgth.	Hgt. Above Board	Lgth. Below 1/16" Board
T51	Phosphor Bronze	0.042"	.32	.03	.228

SOLDERABLE TERMINALS AND PINS

Suitable for PC Board Production, Prototyping and Experimenting



Push-In Terminals -- Hold WITHOUT Staking -- Inexpensive
Faster to Install -- Hold Component Leads Until Soldered
Popular Hole Sizes -- 0.042", 0.062", 0.093"

T42-1 MINIATURIZED COMPACT PUSH-IN

Fits 0.042" dia. holes such as in "P" Pattern Micro-Vectorbord® and can be mounted on 0.1 in. centers side to-side. Tintillate plated. Ideal for IC work because leads can be laid in slots or pass through terminal vertically. By addition of soldered K32 "J" pin series terminal, converts to wire wrappable type.

T28 SERIES

Compact push-in fits 0.062" dia. holes in printed circuit boards and Vectorbord® Patterns B,F,G and H. Tintillate or silver plated, copper alloy material.

T9.4 AND T9.6 SERIES

Push-in type fits 0.093" dia. holes in printed circuit boards or Vectorbord® "A" and "AA" Patterns. Serrated teeth (on all except T9.4A type) hold leads 0.032" to 0.040" in slots until soldered. Supplied with tintillate plating for easy soldering. T9.6 type has more "spring" action in slots and shank.

ORDERING INFORMATION

Supplied in Pkg. 100 or 1000

Part No.	Material	For Hole Dia.	O/A Lgth.	Hght. Above Board	Lgth. Below 1/16" Bd.
T42-1	Copper Alloy brite tin plated	0.042"	.360"	.190"	.107"

Part No.	Plating	Tab End Style	For Hole Dia.	O/A Lgth.	Ht. Above Board	Lgth. Below 1/16" Bd.
T28	Tintillate	Hole	0.062"	.437"	.200"	.175"
T28S	Silver	Hole	0.062"	.437"	.200"	.175"
T28-1	Tin	No Hole	0.062"	.325"	.200"	.063"
T28S-1	Silver	No Hole	0.062"	.325"	.200"	.063"

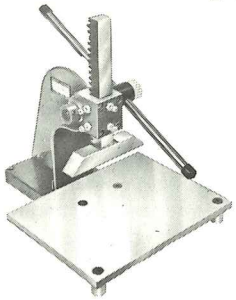
Part No.	Material	Main Slot Style	For Hole Dia.	O/A Lgth.	Ht. Above Board	Lgth. Below 1/16" Bd.
T9.4	Copper Alloy	Serrated	0.093"	.562"	.203"	.296"
T9.4A		Smooth	0.093"	.562"	.203"	.296"
T9.6		Serrated	0.093"	.605"	.324"	.218"

P122B Insertion Tool installs both T9.4 and T9.6 types

In the interest of improved design & performance, Vector reserves the right to make changes in its specifications without prior notice.

VECTOR ELECTRONIC COMPANY, INC. 12460 Gladstone Avenue, Sylmar CA 91342 Phone (213) 365-9661 TWX 910-496-1539

VECTOR TOOLS FOR WIRING AND RIBBON CABLE TERMINATING

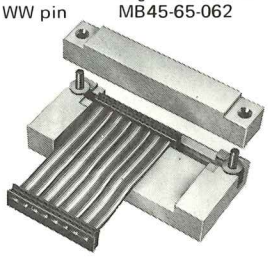


P186-1 ARBOR PRESS for gang inserting terminals. Use with P187 Universal Ribbon Cable Plug Terminating Fixture. Can also be used generally for assembling, bending, blanking, forming, marking, piercing, punching, riveting, and trimming.

The press is die cast high strength Zamak zinc with a ground steel mechanism. A large work area 6" x 8 3/8" (152.4mm x 212.7mm) and a 12" (304.8mm) lever arm coupled with a 2.3" (58.4mm) and 3.6" (91.44mm) vertical capacity make this an ideal addition to any laboratory. Press includes removable pressure bar 4.4" x .75" (111.76mm x 19.05mm) installed on ram for use with terminal installation tools and ribbon cable terminating fixture.

GANG TERMINAL INSTALLING TOOLS for use with P186-1 Press

For Terminal	Tool	Accessories Suggested
K24, K26, K30, K31, K41	P188	alignment block MB45-65-062
P189-16	R30, R31 socket pin	alignment block MB45-65-062 and pickup tray P164
P190-16	R32 socket pin	alignment block MB45-65-062 and pickup tray P164
P192	T28 push-in	alignment block MB45-65-062
P193	T42-1 push-in	alignment block MB45-65-062
P194	T44, T46 WW pin	alignment block MB45-65-062
P196	T46-5 hdr, WW pin	alignment block MB45-65-062
P198	T49 WW pin	alignment block MB45-65-062



P187 UNIVERSAL RIBBON CABLE IDC (Insulation Displacement Connector Terminating Device)

This low cost fixture terminates female IDC plugs made by Vector, Alpha, Amp, Ansley, Berg, CW, JAE, 3M, SAE in seconds. (Excluding Alpha and CW strain relief cover type plugs); Berg "Female Quickie Connector Type 65484 with strain relief requires P187-1 pressure bar which must be ordered separately. For best results, use in listed P186-1 press. Alternately, may be used with ordinary arbor press, vise, or "C" clamp.

ACCESSORIES

Female I.D.C. Plugs—Use on ribbon cable and terminate, using P187 fixture above to make pluggable interconnections between p.c. cards, remote equipment, etc. Vector IDC plugs are compatible with others made by Alpha, Amp Ansley, Berg, CW, JAE, 3M, SAE, and Spectra Strip, and will mate with "headers" created with Vector T46-5 0.025" (.64mm) square pins. Contacts are phosphor bronze gold over nickel plating, located on .1" x .1" (2.54 mm x 2.54 mm) grid, housed in glass filled U.L. listed polyester and have 1 Amp current rating, temperature rating of -55°C to 105°C.

RIBBON CABLE FOR IDC CONNECTORS

Vector ribbon cable is color coded U.L. Style 1061, 28 gage stranded tinned copper, encapsulated in self-extinguishing PVC film. Conductors are precisely spaced 0.050 inches (1.27 mm) apart to provide proper control of electrical characteristics. User may make IDC interconnect cables any required length from the 10 foot (3.05 meters) rolls.

Cat. no.	No. of conductors	Length feet	Length meters	Use with Vector IDC plug no.*
KW2-20-10	20	10	3.05	KS2-20
KW2-40-10	40	10	3.05	KS2-40

*May also be used with other manufacturers' IDC plugs as listed in IDC plug listing on this page.

P180 Slit-N-Wrap Tool

SLIT-N-WRAP WIRE WRAPPING TOOLS AND WIRE FOR .025(.64mm) SQUARE TERMINALS

Slit-N-Wrap wiring is 3 times faster than conventional manual wrapping because it eliminates measuring, cutting and separate wire stripping. Slit-N-Wrap wired joints are gas tight, low resistance—under .005 ohms resistance, and exceed W.W. specification pull-off test requirements.

Slit-N-Wrap wiring tools are patented and have a special tip which makes a slit in the thin but tough polyurethane nylon insulation coating of the 28 gage wire furnished and used with the tool. The slitting occurs as posts are wrapped and **not** between wrap posts when directions are followed. The technique is suitable for production as well as laboratory use, and is readily mastered by anyone.

Two one hundred foot (30.5 meters) spools of Slit-N-Wrap wire are included with each Slit-N-Wrap tool, as well as a P183 wire cutoff chisel and wire forming tool.

Replacement wire is available with insulation colors of red, green, blue, and clear.

All tools listed will also make wrapped connections using prestripped 28 gage wires placed in the tip end.

P160-4T1	110V 60hz Slit-N-Wrap tool with transformer for production use.
P160-4T	Battery powered Slit-N-Wrap tool with batteries, recharger.
P160-8	110 V 60 hz heavy duty charger, bench type. Use on "quick charge" for fast recharge; use on "regular" for overnight or intermittant recharging, of battery powered P180 or P160 series tools.
P180	Manual Slit-N-Wrap tool.
P180A	Replacement bit for all Slit-N-Wrap tools listed.
P181	Quick Clipper for wire.
28 ga replacement wire	Slit-N-Wrap wire supplied in packages of 3.
W28-2A	Pkg 3, green; W28-2B pkg 3, red; W28-2C pkg 3 clear; W28-2D pkg 3, blue.

WIRING PENCIL P178-1

Pencil wiring makes for fast wiring of circuits because spool-fed 36 or 32 gage wire with "solder thru" insulation can quickly be guided and twisted around component leads, I.C. socket tails, etc. and followed by soldering with a 750°F iron (398°C). The insulation "melts" when touched with the iron and solder, quickly producing a solder joint. Minimum technique is involved, and breadboard or production circuitry can be built fast. Tools are furnished with two spools (400' per spool) of 36 gage solder thru wire (one green, one red). Replacement wire is available in color choices of red, green, blue, and clear. 36 gage is 400' per spool; 32 gage is 200' per spool.

Ordering Information

P178-1 wiring pencil with one spool of wire

Replacement wire—36 gage

W36-4A pkg 2 green; W36-4B pkg 2 red; W36-4C pkg 2 clear; W36-4D pkg 2 blue. For 32 gage, order W32-4A, B, C, or D, pkg 2.

WIRING SPACERS

Accessory item keeps wire runs neat and out of way. .212 inch (5.4 mm) high by 3.6 inches long with wire slots and "feet" to fit 0.042 holes at 0.1 inch multiples. Supplied in packages of 20—pin P179WS-3.6, pkg. 20.

Manual Wrapper P160-2A

Power Wrapper P160-4R

WRAP-N-STRAP WIRE WRAPPING TOOLS

Vector tools for wrapping 0.025 square, .045 square, or .031 by .062 posts provide high quality at minimum price, with the added value of single bit/sleeve construction. Manual models and battery powered drivers for wrapping and and unwrapping are listed below.

P160-2A	Manual wrapping tool for 0.025 (.64 mm) square posts, No. 26-30 gage wire.
P160-1A	Manual unwrapping tool for 0.025 (.64 mm) square posts, No. 26-30 gage wire.
P160-9	Combination wrapping/unwrapping tool for 0.025 (.64 mm) square posts and 26-30 gage wire. Use manually or in P160-4R battery powered wrapper.
P160-4R (AC version is P160-4R1)	Battery powered driver for P160-2A wrapper and P160-9 wrapper/unwrapper, above (110 V. 60 hz recharger included).
P160-6	Manual wrapping tool for .045 (1.14 mm) square posts, for No. 22-26 gage wire.
P160-7	Manual unwrapping tool for wrapping .045 inch (1.14 mm) square posts.
P160-2A-1	Bus strapping tool for 0.025 inch (.64 mm) square posts. Wraps solid 26-30 gage bus wire.
P160-6-1	Bus strapping tool for .045 inch (1.14 mm) square posts. Wraps solid 22-26 gage bus wire.

In the interest of improved design & performance, Vector reserves the right to make changes in its specifications without prior notice.

VECTOR DIP SOCKETS, SOCKET PINS & RECEPTACLES

SOCKETS FOR DUAL-IN-LINE DEVICES

DIP sockets available from Vector, accommodate most of the currently used DIP I.C. packages. The best features are incorporated into these sockets:

- Tapered entry helps guide DIP leads into the socket receptacles.
- Gold inlay contact springs firmly hold the DIP leads and accommodate rectangular DIP leads 0.010 inch (0.254 mm) x 0.020 inch (5.08 mm), and up to 0.024 inch (0.609 mm) diameter round pins.
- Individual contacts are accurately spaced 0.1 inch (2.54 mm) side to side for insertion into perforated circuit boards such as Vector "P" pattern.
- Polarizing notch or chamfer on body.

P157-1 DIP INSERTION TOOL

This is a "must" if one wishes to avoid bent leads in the insertion process, since it holds and aligns DIP leads for faster and more accurate assembly into sockets. P157-1 accommodates 14- and 16-pin DIPS.

P150 DIP EXTRACTION TOOL

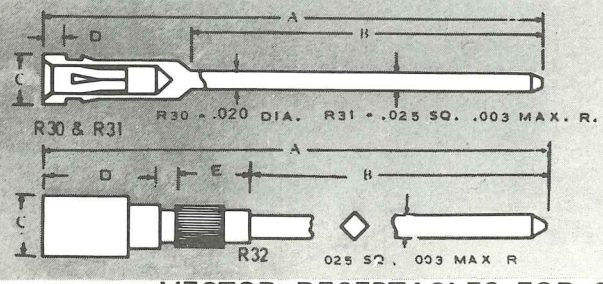
Removal tool for DIPs assures easy pull-out of DIPs without bending leads. P150 extracts 8-, 14-, 16-, and 24-lead DIPs.

DUAL IN-LINE SOCKETS FOR ICS — ORDERING INFORMATION

Catalog No.	CASTING DIMENSIONS Height	Length	Width	Spacing between rows	CONTACTS Max. term. length below casting	Type*
R708-2	0.150 (3.81)	0.400 (10.16)	0.400 (10.16)	0.300 (7.62)	0.150 (3.81)	ST
R714	0.280 (7.11)	0.765 (19.43)	0.400 (10.16)	0.300 (7.62)	0.690 (17.52)	WP
R714-1	0.280 (7.11)	0.765 (19.43)	0.400 (10.16)	0.300 (7.62)	0.144 (3.65)	ST
R714-2	0.150 (3.81)	0.700 (17.78)	0.400 (10.16)	0.300 (7.62)	0.150 (3.81)	ST
R716	0.280 (7.11)	0.865 (21.97)	0.400 (10.16)	0.300 (7.62)	0.690 (17.52)	WP
R716-1	0.280 (7.11)	0.865 (21.97)	0.400 (10.16)	0.300 (7.62)	0.144 (3.65)	ST
R716-2	0.150 (3.81)	0.800 (20.32)	0.400 (10.16)	0.300 (7.62)	0.150 (3.81)	ST
R724	0.280 (7.11)	1.280 (32.51)	0.700 (17.78)	0.600 (15.24)	0.690 (17.52)	WP
R724-2	0.150 (3.81)	1.200 (30.48)	0.700 (17.78)	0.600 (15.24)	0.150 (3.81)	ST
R740	0.280 (7.11)	2.080 (52.83)	0.700 (17.78)	0.600 (15.24)	0.690 (17.52)	WP
R740-2	0.280 (7.11)	2.080 (52.83)	0.700 (17.78)	0.600 (15.24)	0.144 (3.65)	ST

*ST = Solder Tail; WP = Wrap Post .025 inch (.64 mm sq.)

P150 is DIP Hand Extraction Tool; P157-1 is DIP Hand Insertion Tool—installs all 14- & 16-pin DIPs



SOCKET PINS

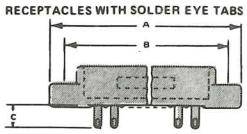
High quality copper alloy gold plated four-fingered contacts are housed inside gold plated brass screw machine terminals with solderable or 0.025" sq. wire wrappable tails for installing wherever required in 1/16" thick circuit boards. Models R30 and R31 have lower profile than low-profile DIP sockets, and press fit into 0.055" dia. holes. Model R32 fits 0.042" dia. holes in "P" Pattern Micro-Vectorbord® or DIP Plugbords.

Part No.	Tail Type	Dimensions A	B	C	D	E	Supplied in Pkg.:
R30	Solder	.29	.11	.072	.030	---	25, 100, or 1000
R31	WW	.703	.500	.072	.030	---	25, 100, or 1000
R32	WW	.745	.500	.072	.155	.075	25, 100, or 1000

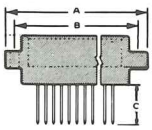
P158 Impact Insert. Tool w/D10 Die Point inserts R30, R31; w/D9 Die Point inserts R32. P158-1 Holder adapts Tool to drill or arbor press.

VECTOR RECEPTACLES FOR 0.062 THICK CIRCUIT CARDS

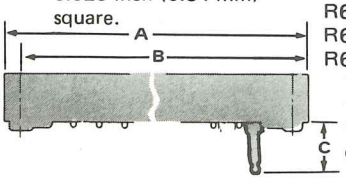
RECEPTACLES WITH SOLDER EYE TABS



RECEPTACLES WITH 0.025 SQ. WRAP POST TAILS



Vector receptacles are designed to accept printed circuit cards made by Vector or other manufacturers. Quality material and construction are used throughout to insure reliable performance. All wire wrappable contact tails (wrap post type) are 0.025 inch (0.64 mm) square.



Model No.	No. of Contacts	Spacing	Contact Tail Style	A	B	C	Accepts Vector Plugbord
R630	15/30	0.156	Solder Eyelet	3.27	2.94	.28	3796, 3797
R630-1	15/30	0.156	Wrap Post	3.27	2.94	.62	3796, 3797
R636-1	36/72	0.100	Wrap Post	4.44	4.175	.60	All 3719 Models All 4066 Series 4312 Series
R636-2	36/72	0.100	Solder Eyelet	4.48	4.175	.25	All 3719 Models All 4066 Series 4312 Series
R644	22/44	0.156	Solder Eyelet	4.36	4.03	.28	All 3677, 3682 All 4112, All 838 Models 3662, 3474, 4050-1
R644-3	22/44	0.156	Wrap Post	4.36	4.03	.60	All 3677, 3682 All 4112, All 838 Models 3662, 3474, 4050-1
R612-1*	12	0.2	Solder	3.15	2.88	.27	837 Series
R616-1*	16	0.2	Solder	3.95	3.68	.27	812 Series
R635*	35	0.1x0.2	Solder	4.21	3.93	.27	848 Series
R680	40/80	0.125	Wrap Post	5.81	5.545	.62	4350
R680-1	40/80	0.125	Wrap Post	5.81	5.545	.62	4350
R680-2	40/80	0.125	Solder Eyelet	5.81	5.545	.25	4350
R681***	50/100	0.125	Dip Solder	7.06	6.795	.25	8800V Series
R681-1	50/100	0.125	Wrap Post	7.06	6.795	.62	8800V Series
R681-2**	50/100	0.125	Wrap Post	7.06	6.795	.22	8800V Series

*Elco Varicon contacts

**Single level wrap tail with 0.250 spaced rows for wrapping, soldering, or IMSAI mother boards

***Dip solder tails with 0.140 (3.56 mm) spaced rows for Altair mother boards. Fits 0.042 inch diameter (1.07 mm) holes.

In the interest of improved design and performance, Vector reserves the right to make changes in its specifications without prior notice.

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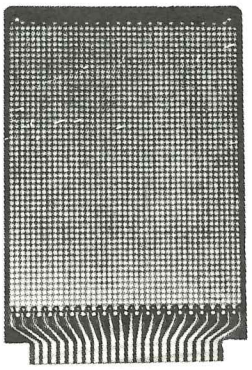
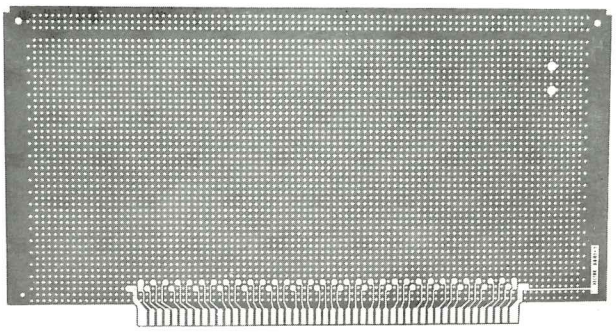
Vector PLUGBORDS SAVE TIME – MONEY



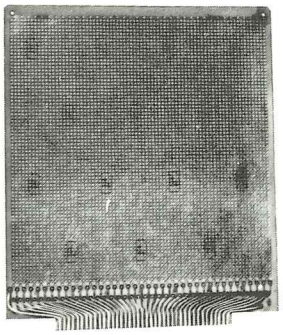
3662

848WE

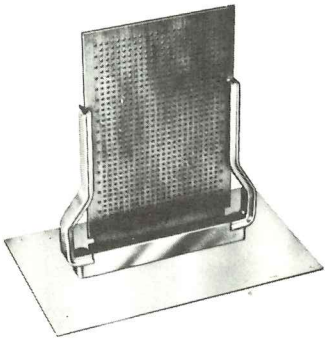


8801-1

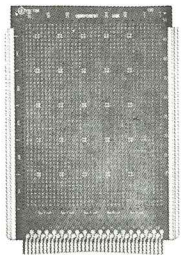
3662A-6 supplied with copper plane; 3662A supplied without ground plane



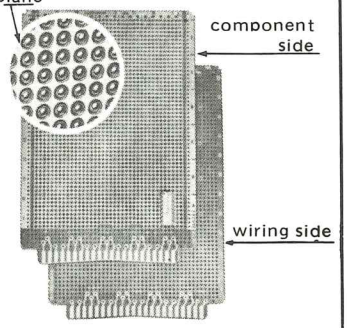
3673



BR27-3 RECEPTACLE MOUNTED CARD GUIDE (on R630 Receptacle with 2.73 in. wide Plugbord)



4312



3662A & 3662A-6

PLUGBORDS FOR GENERAL USE WITH CONTACTS
But Without Matrix or Circuit Patterns

Use for building prototype, test and short run plug-in circuits because almost any component from DIPs to large resistors can be mounted anywhere on the boards. Boards have an overall grid of prepunched holes: 0.042 in. dia. on 0.1 in. centers (Pattern "P"); 0.062 in. diameter on alternate 0.1 in. centers (Pattern "G"); or .062 in. dia. holes on 0.1 in. centers (Pattern "H"). Boards are available with varied connector arrangements and mating connectors are listed. Back to back contacts on each etched side terminated in independent hole pads. Most boards have holes for attaching card ejectors.

CONTACT SPECIFICATIONS. Etched contacts:
Epoxy glass Plugbords - 2 oz. copper .00005" nickel plate, gold flash.

Quality flame-retardant 1/16" thick board materials are the same as those used for Vectorbord* and Micro-Vectorbord*, see preceding page. Terminals to fit.

Pattern	Board Size	Epoxy Paper	Epoxy Glass	Contacts No.	Contacts Style	Contacts Spacing	Contacts Plating	Mating Connectors Solder Tail	Mating Connectors Wrapped Tail
G	4.5"x6.5"	812	812WE	16	ElcoVar	.2	Gold	R616-1	----
G	3"x4.5"	837	837WE	12	ElcoVar	.2	Gold	R612-1	----
G	4.5"x6.5"	838 †	838WE †	44	Etched	.156	Tinned	R644	R644-3
G	4.5"x6.5"	838-1		44	Etched	.156	Tinned	R644	R644-3
G	4.5"x6.5"	838A †	838AWE †	22	Etched	.156	Tinned	R644	R644-3
G	4.5"x6.5"	----	838WE-1GN	44	Etched	.156	NPGF	R644	R644-3
G	4.5"x6.5"	----	848WE	35	ElcoVar	.10	Gold	R635	----
P	3"x4.5"	----	837PWE	12	ElcoVar	.2	Gold	R612-1	----
P	2.73"x4.5"	----	3795	44	Etched	.1	NPGF	----	R644-2
P	2.73"x4.5"	----	3797	30	Etched	.156	NPGF	R630	----
P	4.5"x6.5"	----	3719-1	72	Etched	.1	Tinned	R636-2	R636-1
P	4.5"x9.6"	----	3719-4	72	Etched	.1	NPGF	R636-2	R636-1
P	4.5"x4.5"	----	3719-5	72	Etched	.10	NPGF	R636-2	R636-1
P	4.5"x6.5"	----	3662	44	Etched	.156	NPGF	R644	R644-3
P	4.5"x9.6"	----	3662-2	44	Etched	.156	Tinned	R644	R644-3
P	4.5"x4.5"	----	3662-4*	44	Etched	.156	NPGF	R644	R644-3
P	4.5"x4.5"	----	3662-5	44	Etched	.156	NPGF	R644	R644-3
P	4.5"x6.5"	----	3662A	44	Etched	.156	NPGF	R644	R644-3
P	4.5"x6.5"	----	3662A-6*	44	Etched	.156	NPGF	R644	R644-3
P	7.98"x9.6"	----	3673	80	Etched	.125	NPGF	----	R680
H	4.5"x6.5"	----	4312	72	Etched	.1	NPGF	R636-2	R636-1
P	5.3"x10.1"	----	8801-1	100	Etched	.125	NPGF	R681-3	R681-1

* Has 2 oz. tinned copper ground plane on back side w/etched clearance holes.
ElcoVar=Elco Varicon NPGF=Nickel Plated Gold Flashed

RECOMMENDED CARD CAGES †Boards keyed with .1 offset on plug-in portion.
For above Plugbords: 4.5"x6.5" -CCK-13 or CCK-13P; 4.5"x4.5"- CCK13A or CCK13AP; 7.98"x9.6" - CCK17; 4.5"x9.6" - CCK4, CCK14 or CCK14P.

RECEPTACLE MOUNTED CARD GUIDES

The BR27 Series Card Guides provide rugged support for 1/16 in. free-standing circuit boards and sure guidance while engaging board and receptacle. This arrangement is commonly found on "mother boards" and in units where space is at a premium. Package quantity all catalog numbers: 2 guides; 2 screws, 4/40, Pan Hd., 3/4 in. long; 2 flat washers; 2 lock washers; 2 hex nuts, 4/40. In bulk quantities (more than 50 prs.) fasteners packaged separately from guides. Material is aluminum alloy, clear anodized.

ORDERING INFORMATION

Guide No.	Connector	For Plugbord Types:
BR27	R644, R644-3 (0.156")	4.5" wide Plugbords with centered contacts, such as Vector 838-1, 3474, 3677, 3682 and 3662 Series.
BR27-1	R636-1 (0.1")	4.5" wide Plugbords with centered contacts, such as Vector 3719 Series.
BR27-3	R630 (0.156")	2.73" wide Plugbords with centered contacts, such as Vector 3796 and 3797 Series.
BR27-4	R644-2 (0.1")	2.73" wide Plugbords with centered contacts, such as Vector 3795.

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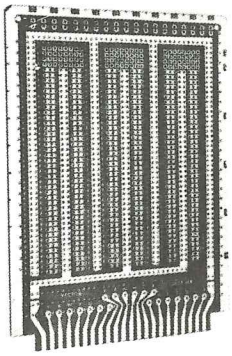
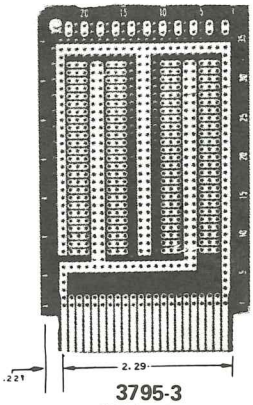
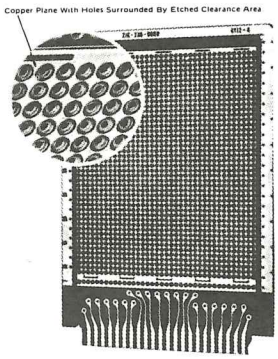
Vector PLUGBORDS FOR FLEXIBILITY



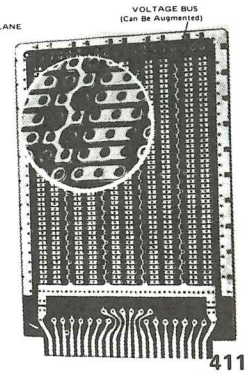
3677-2



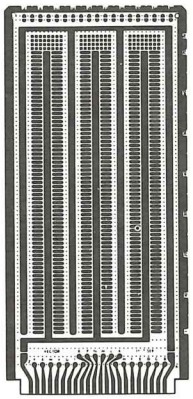
3795-3
(Wiring Side)



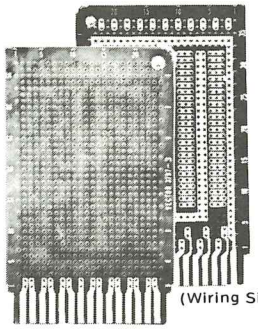
4112-4
(Component Side)



4112-4
(Wiring Side)



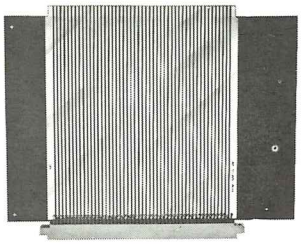
3677



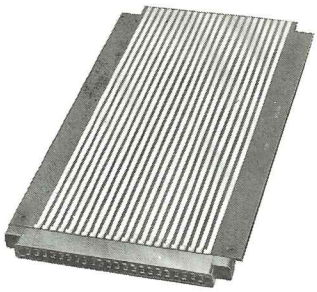
(Wiring Side)

(Component Side)

3797-3



3690-12 CARD EXTENDER



3690 CARD EXTENDER

PLUGBORDS WITH ETCHED TINNED PADS AND BUSES

Use for prototype, test, and short run plug-in circuits. All boards have an overall hole grid of 0.042 in. holes on 0.1 in. centers (Pattern "P"). All etched circuitry above contact area is tinned for easy soldering. Boards are available with varied contact arrangements and mating connectors are listed. Back to back contacts on each etched side terminate in independent hole pads. Terminals to fit.

3677, 3797 and 3795 SERIES

These Plugbords have etched tinned buses, interleaved between pad areas. All models have tinned 3-hole pad groups for easy component mounting and interconnection. DIPs or components may be soldered directly to pads, or terminals installed in pads. Socket tabs may also be attached to the pads to facilitate making component changes. The heavy etched and tinned interleaved ground and voltage buses make complicated circuit construction quite easy, while providing great flexibility. The 3677 series has 96 individual pads for mounting T0-5 and T0-18 transistors or round case integrated circuits.

4112 SERIES

These Plugbords have groups of 3-hole pads, interleaved "zig-zag" voltage bus, plus an overall etched ground plane on opposite side. The "zig-zag" design permits installed pins to connect or bypass the bus as desired. Reduced impedance and noise can be achieved with addition of Vector's double overhead trolley bus. DIPs or components may be soldered directly to pads, or terminals installed in pads. Socket tabs may also be attached to the pads.

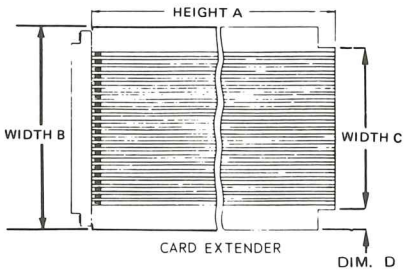
For above Plugbords: **RECOMMENDED CARD CAGES**

4.5"x6.5" -- CCK-13 or CCK-13P 4.5"x4.5" -- CCK13A or CCK13AP
7.98"x9.6" -- CCK17 4.5"x9.6" -- CCK4, CCK14 or CCK14P

Board Size	Part No.	No. DIPs Accom. 14 p.	16 p.	No.	Contacts - Etched Spacing	Plating	Mating Solder Tail	Connectors Wrapped Tail
2.73"x4.5"	3795-1	6	4	44	.1	NPGF	----	R644-2
2.73"x4.5"	3797-2	6	4	30	.156	NPGF	R630	R630-1
4.5"x9.6"	3677	24	21	44	.156	NPGF	R644	R644-3
4.5"x6.5"	3677-2	15	12	44	.156	NPGF	R644	R644-3
4.5"x6.5"	4112-4	25	25	44	.156	NPGF	R644	R644-3
4.5"x4.5"	4112-5	15	10	44	.156	NPGF	R644	R644-3

NPGF=Nickel Plated Gold Flashed

CONTACT SPECIFICATIONS. Etched contacts:
Epoxy glass Plugbords -- 2 oz. copper .00005" nickel plate, gold flash. Quality flame-retardant 1/16" thick board materials are the same as those used for Vectorbord® and Micro-Vectorbord®, see preceding page.



3690 SERIES CARD EXTENDERS

Card Extenders allow extension of operating cards beyond cages for tests. Quality epoxy glass with nickel plated gold flashed plug tips and high quality top connector where indicated.

Extender Catalog No.	Dimensions A	B	C	D	Contact Strip	Receptacles Supplies	Plugbord Series Used With
3690	6.5"	4.5"	3.6"	.46"	22 ea side,.156"ctrs.	R644	838,3474,3662,
3690-1	6.5"	4.5"	3.6"	.46"	22 ea side,.156"ctrs.	None	3677,3682,4050
3690-6	11.0"	4.5"	3.6"	.46"	22 ea side,.156"ctrs.	R644	4112,4494
3690-2	11.0"	4.5"	3.7"	.40"	36 ea side,0.10"ctrs.	R636	4493,3719
3690-3	11.0"	4.5"	3.7"	.40"	36 ea side,0.10"ctrs.	None	4066,4312
3690-4	7.5"	4.5"	3.7"	.40"	36 ea side,0.10"ctrs.	R636	
3690-8	5.5"	2.73"	2.3"	.22"	22 ea.side, 156"ctrs.	R644-2	3795
3690-10	5.5"	2.73"	2.5"	.12"	15 ea side,.156"ctrs.	R630	3797
3690-12	7.5"	9.99"	6.37"	1.49"	50 ea side,.125"ctrs.	R681	8800
3690-13	7.5"	9.99"	6.37"	1.49"	50 ea side,.125"ctrs.	None	
3690-14	11.0"	6.99"	5.11"	.94"	40 ea side,.125"ctrs.	R680	3673,4350
3690-15	11.0"	6.99"	5.11"	.94"	40 ea side,.125"ctrs.	None	

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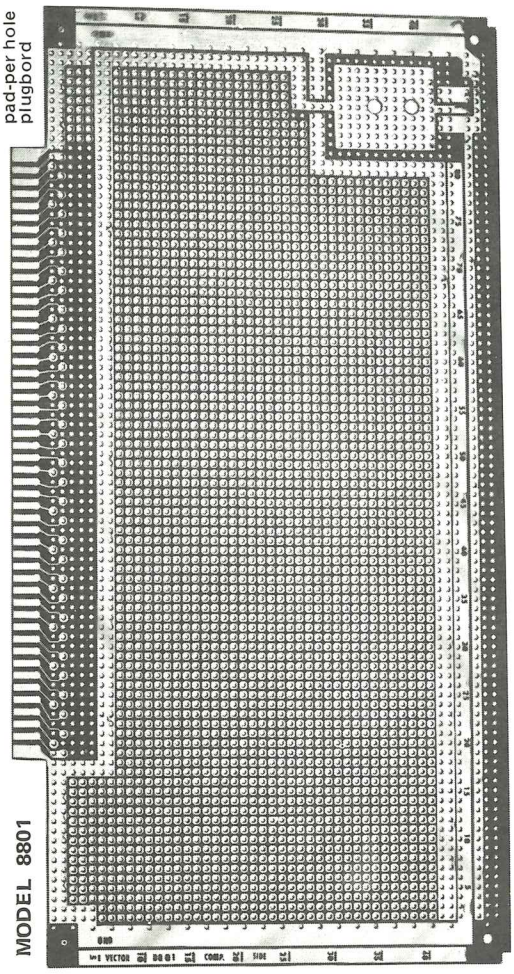
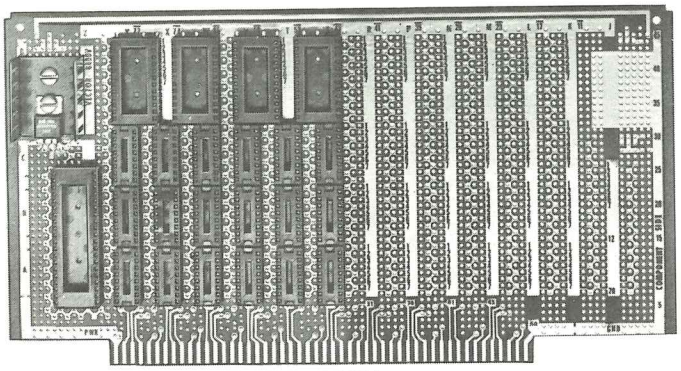
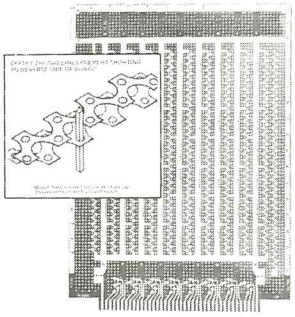
VECTOR MICROPROCESSOR PLUGBORDS

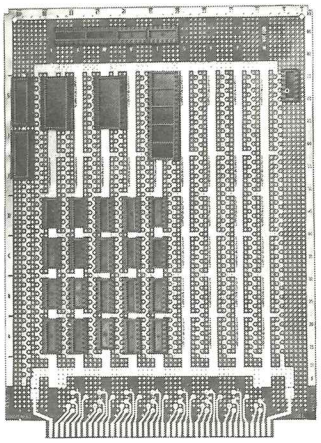




8800V
(Component side with added sockets. Available to order with sockets & terminals installed)



4350
(Wiring Side w/ Insert Showing Zig-Zag Bus)



4350
(Component Side w/ Added Sockets)

MICROPROCESSOR PLUGBORDS

With Vector Universal Microprocessor Plugbords, users can readily install any DIP device and quickly make the necessary interconnections to build peripheral interface equipment, expand memory capacity, or I.O. circuitry. Above FR-4 epoxy glass boards are furnished with an overall grid of 0.042 in. dia. holes on 0.1 in. centers, heavy tinned buses, plus nickel plated gold flashed contacts. Low in cost, the boards are planned for user installation and interconnection of wrap-post sockets wherever required. Large copper-free areas are provided for installation of flat cable I.O. connectors or large bodied discrete devices.

MODEL 8801 PAD-PER HOLE PLUGBORD

This plugbord measuring 5.313 in. high x 10.0 in. wide has 100 contacts (total two sides) spaced 0.125 in. centers and an overall pattern of 0.042 in. diameter holes spaced on 0.1 centers. Almost any device can be located anywhere on the board. Heavy tinned power and ground buses are provided on the board periphery and the one regulator position provided has prewired power, and ground connections. Tinned "donut" pads on both board sides with intervening clear areas surround all the individual holes within the peripheral buses. These pads provide solderable anchors for attaching almost any component or socket at any desired location. At the boards top edge, a copper free area approximately ¼ in. wide with 2 rows of holes is available for mounting I.O. connectors or other devices. Row and column markings, plus ejecter mounting holes are also provided. Board material is epoxy glass with hot tinned buses, nickel plated and gold flashed contacts. Mating Receptacles: R681 w/DIP solder tails fits Altair Motherboards; R681-1 - 3 level 0.025 in. square wrap post tail; R681-2 - 1 level 0.025 in. square wrap post tails fits IMSAI motherboards.

8800V — 10 in. wide by 5.313 in. high, has 100 (50 each side) contacts on 0.125 in. centers. Compatible with Altair 8800 and the IMSAI equivalent, the board can hold two 40-pin DIPs, eight 24-pin DIPs, and thirty-six 14- or 16-pin DIPs. Alternatively, it can hold fifty-two 14- or 16-pin DIPs, or ten 40-pin DIPs and eight 24-pin DIPs, or any combination in-between. Power is distributed to each DIP location by heavy copper tinned power and ground planes on opposite board sides for low impedance. Has two heat sink provisions, and one heat sink supplied with each board. For wiring ease, boards are identified by DIP zones as well as column and row hole designations.

Mating Connectors For 8800V

R681 — 50/100 contacts on 0.125 in. centers w/ soldertails
R681-1 — Same as R681 except w/ 0.025 in. sq. wrap-post tails

4350 — 7 in. wide by 9.6 in. long, has 80 (40 each side) contacts on 0.125 in. centers. Compatible with TI 980 series computer, the board will hold sixty-three 14- or 16-pin DIPs over the power and ground buses, or six 24-pin DIPs plus forty-five 14- or 16-pin DIPs, or 40-pin microprocessor DIPs anywhere by cutting one etched jumper lead per location. Heavy, back-to-back tinned copper buses provide distributed decoupling capacitance. For user convenience, an extra plus or minus voltage zig-zag power bus is supplied on each side of the board.

Mating Connectors For 4350, 3673

R680-1 — 40/80 contacts on 0.125 in. centers; 0.025 in. sq. wrap post tails
R680 — Lower priced version of R680-1; numbering does not match 4350

Quality flame-retardant 1/16" thick board materials are the same as those used for Vectorbord®and Micro-Vectorbord®, see preceding page.

RECOMMENDED CARD CAGES

For Plugbords: 4.5"x6.5"- CCK3,CCK13 or CCK13P; 4.5"x4.5" - CCK13A or CCK13AP; 7.98"x9.6" - CCK17; 4.5"x9.6" - CCK4, CCK14 or CCK14P.

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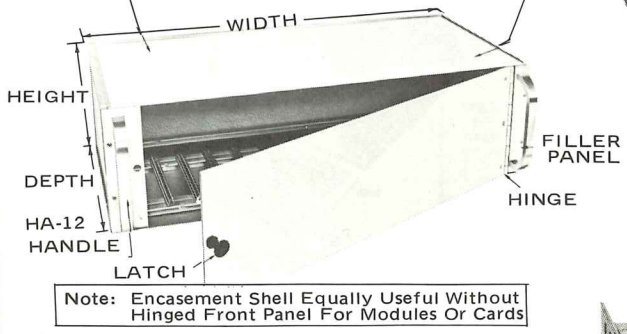
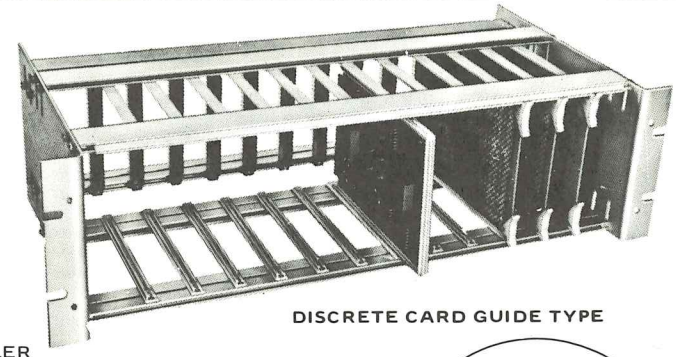
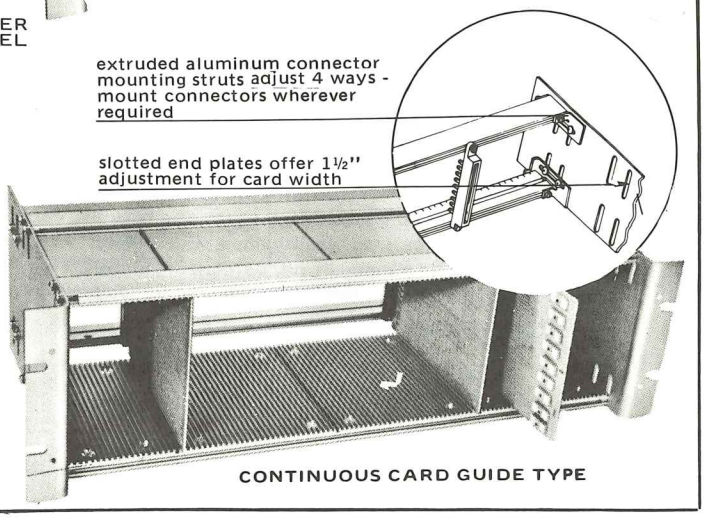
VERSATILE CARD CAGES



Note: Encasement Shell Equally Useful Without Hinged Front Panel For Modules Or Cards



DISCRETE CARD GUIDE TYPE



CONTINUOUS CARD GUIDE TYPE

CAGE ENCASEMENT SHELL NO. CE-55-95 WITH CCK-13 CAGE

Plus Hinged Front Panel No. HP52-1 and HA-12 Handles

ALSO SEE VECTOR-PAK ENCLOSURES WITH BUILT-IN GUIDES

NEW AND BEAUTIFUL CAGE ENCASEMENTS

The CE Series Cage Encasement Shells provide the finishing touch needed when a portable table-top unit is desired rather than rack mounting. Good accessibility is provided by easily removable top, bottom and rear covers. In addition, the cage can be quickly removed from the encasement shell by removing the screws from the front panel and the top and bottom covers. Supplied in knock-down form consisting of two assembled side panels, plus top, bottom and rear covers and required screws. The hinged front panel is an optional accessory (see below).

HINGED FRONT PANEL – SIDE HINGED

Hinged Front Panels, for card protection and improved appearance, come in easily assembled kit form which includes the hinged panel with latch, striker plate and two filler panels. Panels are of 1/8 in. thick aluminum with a clear anodized finish. All members (except screws) are clear anodized aluminum. (See ordering information on Card Cages for part numbers and dimensions.)

ASSEMBLED CARD CAGES

Supplied Fully Assembled - Riveted Card Guides
Connectors Are Easily Positioned Without Hole Drilling
Accommodate Most Popular Card Sizes
Adjustable For Different Card Widths
Ruggedly Handsome - Industrial Quality - Anodized Finish

Two connector mounting struts at rear are bracket mounted and furnished with 21 pairs of captive 4/40 nuts which may be positioned anywhere for fast, easy connector mounting. Heavy aluminum side walls have standard hole pattern for rack mounting. Card marker strips are included.

DISCRETE GUIDE TYPE

Cage supplied with riveted aluminum or plastic card guides for 1/16 in. thick cards attached to heavy extruded aluminum cross members.

CONTINUOUS PLATE TYPE

For maximum card density and position flexibility. Extruded aluminum plates with 0.075 in. wide .100 in. deep grooves on 0.150 in. centers are riveted to heavy aluminum cross pieces.

ORDERING INFORMATION

Card Size Range			CARD CAGES							Card Cage Dimensions			SIDE HINGED FRONT PANELS	CAGE ENCASEMENTS			
			Discrete Guide Type				Continuous Extruded Metal Plate Type							Encasement Dimension			
Width Max.	Length Min.	Length Max.	No.Cd. Posit.	Spac-ing	Plastic Guides	Metal Guides	No.Cd. Posit.	Spac-ing	Part No.	O/A Wdth.	O/A Dpth.	O/A Hght.		Part No.	O/A Wdth.	O/A Dpth.	O/A Hght.
4½"	3"	6½"	21	¾"	CCK13P	CCK13	108	.150	CCK3	19"	9"	5¼"	HP52-1	CE55-95	19"	9.5"	5.5"
4½"	3"	4½"	21	¾"	CCK13AP	CCK13A	—	None	—	19"	9"	5¼"	HP52-1	CE55-95	19"	9.5"	5.5"
4½"	3"	9.6"	21	¾"	CCK14P	CCK14	108	.150	CCK4	19"	12"	5¼"	HP52-1	CE55-125	19"	12.5"	5.5"
6¼"	4¾"	9.6"	21	¾"	CCK15P	CCK15	108	.150	CCK5	19"	12"	7"	HP70-1	None			
7.98"	6½"	6½"	21	¾"	CCK16P	CCK16	108	.150	CCK6	19"	9"	8¾"	HP87-1	None			
7.98"	6½"	9.6"	21	¾"	CCK17P	CCK17	108	.150	CCK7	19"	12"	8¾"	HP87-1	CE90-125	19"	12.5"	9.0"

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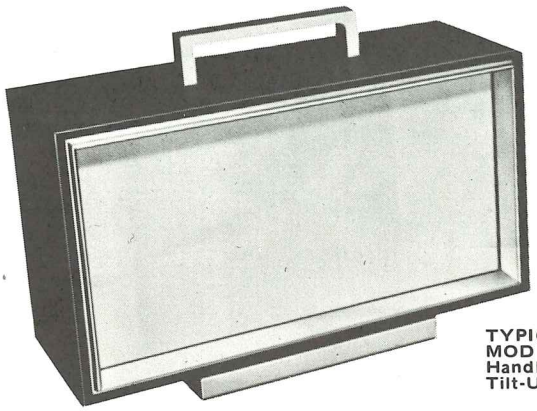
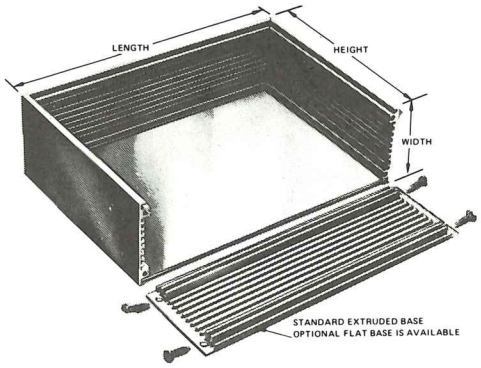
Vector INSTRUMENT CASES & PATCHBOARD SYSTEMS



TYPICAL MULTI-MOD CASE with Handle, Bezels, Tilt-Up Pedestal

MULTI-MOD CASES

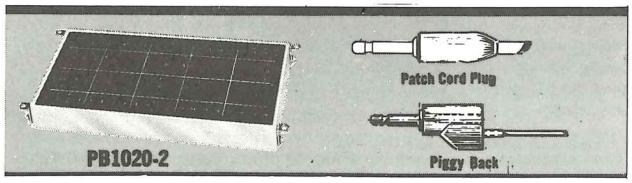


(One side panel omitted to show interior construction)

Multi-Mod cases offer the user the classic simplicity of extruded aluminum formed into an instrument or component case having both strength and functional beauty. Available in a wide variety of sizes, finishes and colors, all models have a clear anodized finish, unless otherwise indicated, and a series of interior 0.075" wide longitudinal grooves which hold circuit boards, mounting plates, and the sliding side covers which provide easy interior access. Removal of only four screws permits removal of the base plate, sliding side covers, and interior circuit card(s). Decorative extruded aluminum bezels are available on some models for an even more finished front panel appearance. Special sizes and finishes are available to order -- write factory.

Clear Anodized Finish Catalog No.	Color Anodized Finish Catalog No.	Frame Color	Panel Color	Width	Length	Height	Circuit Card & Panel Size	Part No. for Interior Fitting Prepunched Epoxy Glass Board w/.042 Holes 0.1x 0.1†
W16-31-31B				1.6	3.10	3.10	2.98x2.98	29P29-062
W20-46-31B	W20-46-31F4PL4	Blue	Blue	2.0	4.61	3.10	4.50x2.98	44P29-062
	W20-46-31F2PL2	Black	Black	2.0	4.61	3.10	4.50x2.98	44P29-062
	W20-46-31-1	Gold	Gold	2.0	4.61	3.10	4.50x2.58	44P29-062
W20-46-46B				2.0	4.61	4.61	4.50x4.50	44P44-062
W20-66-46B				2.0	6.61	4.61	6.50x4.50	64P44-062
W30-66-46B	W30-66-46F4PL1	Blue	Clear	3.0	6.61	4.61	6.50x4.50	64P44-062
W30-86-46B	W30-86-46F4PL4	Blue	Blue	3.0	8.61	4.61	8.50x4.50	84P44-062
W30-100-46B				3.0	10.0	4.61	9.88x4.50	98P44-062
W45-66-46B				4.5	6.61	4.61	6.50x4.50	64P44-062
W45-86-46B	W45-86-46-2	Black	Blue	4.5	8.61	4.61	8.50x4.50	84P44-062
	W45-86-46F2PL2	Black	Black	4.5	8.61	4.61	8.50x4.50	84P44-062
W45-100-46B				4.5	10.0	4.61	9.88x4.50	98P44-062

†Order Separately

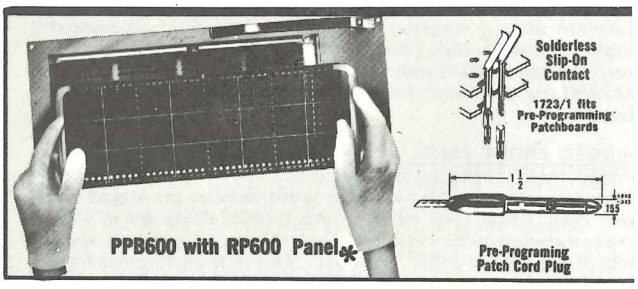


FIXED PANEL PATCHBOARDS

Reliable, low cost programing panels for maximum program flexibility at minimum cost. Available in sizes with 20, 50, 100, 200 and 300 contacts, spaced on .265" grid. Wrap-around beryllium copper nickle gold plated contacts handle up to 5 amps, and are located behind protected entry hole for damage-free years of use. Supplied with standard alpha-numeric markings or custom markings to order. Full line of color coded .090" tip diameter patchcords including piggy backs available.

Cat. No.	Contacts	Outside Dimensions W.	H.	Patch Cords † Standard	Piggyback	Lgth.
PB210-2	20	2.985" x	.865"	K2.06	K9.06	6"
PB510-2	50	2.985" x	1.660"	K2.09	K9.09	9"
				K2.15	K9.15	15"
PB1010-2	100	2.985" x	2.985"	K2.02-1	—	Jumper
PB1020-2	200	5.635" x	2.985"			
PB1520-2	300	5.635" x	4.310"			

† Plugs are attached at each end.



VECTOR PRE-PROGRAMING PATCHBOARDS

Vector Pre-Programing Patchboard Systems are made with 204, 300, 600, and 1200 contacts, Long lived beryllium copper, nickle or gold contacts assure reliability over thousands of cycles. Transverse engagement cycle assures post patching capability. Complete line of color-coded patch cords available. Removable programing panels supplied with standard alpha-numeric markings, blank or customer supplied markings. *RP600 Series. RP600BLKA is shown.

Recept. Frame Cat. No.	Outside Dimen. W.	H.	No. of Contacts	Mating Remov. Panels Unmarked Cat. No.	Std. marked Cat. No.
PPB204	10⅜"	6"	204	RP204BLK	RP204BLKA
PPB300	10⅜"	6"	300	RP300BLK	RP300BLKA
PPB450	16"	6"	450	RP450BLK	RP450BLKA
PPB600	16"	6"	600	RP600BLK	RP600BLKA
PPB1200	17"	10¾"	1200	RP1200BLK	RP1200BLKA

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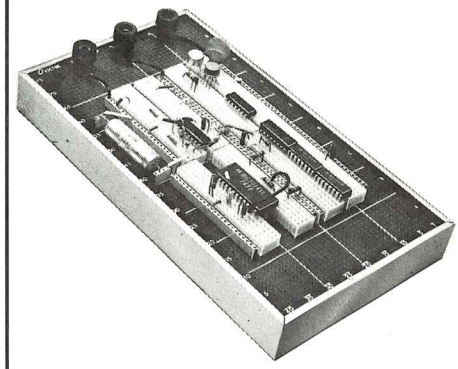
KLIP-BLOK/STRIP BREADBOARDING SYSTEM

Vector



51X KIT

(Circuit elements not included in kit)

No Soldering **Use With DIPs. Other I.C.s and Discrete Components** **No Wrapping**

Build circuits quickly with Klip-Bloks, Klip-Strips and Klip-Buses. Simply insert components into these spring clip units and make interconnections with ordinary wire. Designing, modifying and testing the circuit is easily accomplished without the need of special patch cords or risk of damaging components.

Klip-Bloks, Strips and Buses consist of spring clips with four connected tie points or 'quads.' Klip-Strips and Buses utilize the quads in strips of various lengths, from 4 to 48 tie points with insulated casings, while Klip-Bloks have these quads encased in nylon shells, either 8 (T66-32) or 24 (T66-96) quads each. All Klip-Bloks, Strips and Buses are spaced on 0.1" grids for optimum I.C. breadboarding. Klip-Bloks, Strips and Buses accept leads from 0.015" to 0.032" dia. Ordinary 22 ga. wire (0.0253" dia.) is ideal for strapping. Components may be inserted into the clips from either top or bottom. The Bloks serve as sockets for components with extra tie points for interconnections. Accompanying Klip-Buses make voltage and ground readily accessible.

Contacts used in Klip-Bloks and Strips are tin lead coated beryllium copper for thousands of reliable connections. Plastic housings on Klip-Bloks are nylon, and insulated brass shells are used on Klip-Strips and Buses.

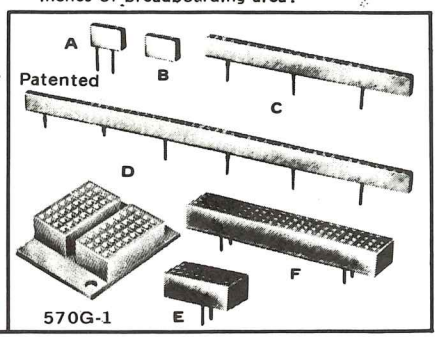
VERSATILE. Klip-Bloks, Strips and Buses fit "P" Pattern Micro-Vectorbord (0.042" dia. holes on 0.1" grid). Thus units may be "moved around" as needed with NO WASTED TIE POINTS. Plus, there is extra SPACE on the Vectorbord base to mount switches, pots, transformers--OR extra Klip units.

REUSABLE. Low-cost Klips and chassis panels may be used over and over again. Klips are good for thousands of insertions and may also be removed and replaced as desired.

EFFICIENT USE OF SPACE. Since components may be mounted on both top and bottom of the Vectorbord base, space is fully utilized. T49-1 Adapter Pins for leads to 0.050" dia. are available.

EXPANDABLE BREADBOARDS. 4½"x8" modules may be coupled together or mounted in larger frames for up to multiples of 144 sq. inches of breadboarding area.

Fig.	Part No.	Description	Pkg. Qty.
A	T45-4	Klip-Strip w/mtg. pins	16, 100
B	T45A-4	Patch-Klip - no mtg. pins	16, 100
--	T45-8	Klip-Strip - two quads	2, 10
C	T45-24	Klip-Bus	2, 10
D	T45-48	Klip-Bus	2, 10
--	P154-1	Insertion/Removal Tool for above Klip units	1
E	T66-32	Klip-Blok (8-quad)	4, 16
F	T66-96	Klip-Blok (24-quad)	2, 8
--	P92B	Removal Prod for Bloks	1
--	T49-1	Adapter Pins for leads to .050"	100
--	570G-1	Solderless Breadbd. Socket (2 8-qd. Klip-Bloks mounted on nylon base)-for 14-or 16-pin DIP. Stick-or screw-on.	1



51X KLIP-BLOK KIT - Assembled

Accepts up to 12 DIPs, has 970 tie points. Consists of big 4½"x8"x1/16" glass epoxy premarked Micro-Vectorbord® base, panel mounted on 1" high aluminum frame with eight 24-quad (T66-96) Klip-Bloks and four 48-contact Klip-Buses installed, ready for plugging in up to 12 DIPs and associated circuitry. Three 5-way binding posts are installed at one end. The Micro-Vectorbord panel provides space and facility for mounting extra large components. Kit includes stick-on MS9A and MS10A DIP contact Marker Strips, and special T49-1 Adapter Pins for plugging large components into Klip-Bloks/Strips.

PLUG-IN CASES For Building Modular Plug-In Circuits

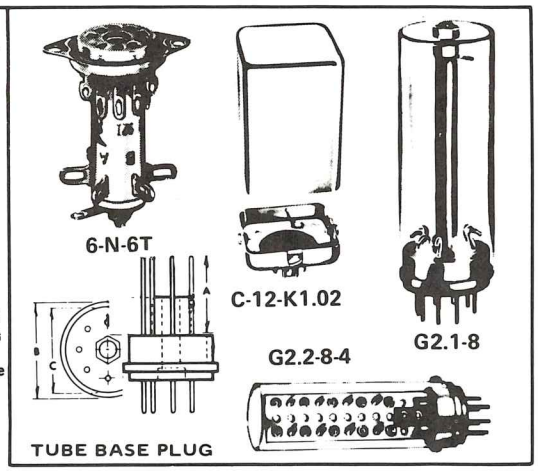
ROUND CASES listed consist of a mica filled phenolic tube base type plug, either standard 7-pin miniature, 9-pin noval, or 8-pin octal type, and cover. Some listed models have interior wiring structures for mounting components. Covers attach with furnished screws. Other sizes and "specials" to order -- write factory.

Base Plug Type	Part No.	Dia.	Lgth.*	Furnished Internal Structure
7-pin Min.	G2.2-8	5/8"	2"	Center Screw + Insul. Spacer
9-pin Min.	G2.1-8	3/4"	2"	Center Screw + Insul. Spacer
7-pin Min.	G2.2-8F	5/8"	2"	None
9-pin Min.	G2.1-8F	3/4"	2"	None
7-pin Min.	G2.2-8-4	5/8"	2"	Terminal Wall Strip w/ Terminals
9-pin Min.	G2.1-8-4	3/4"	2"	Terminal Wall Strip w/ Terminals
8-pin Octal	G2-10	1¼"	2½"	None
8-pin Octal	G2-10-4	1¼"	2½"	Terminal Wall Strip w/ Terminals

*Does not include plug pins.

SQUARE CASES with retainer ring mounted mica filled phenolic plugs. Models listed have 8-pin octal type plugs retainer-ring-mounted in bases to which covers attach with 3 furnished side screws.

Base Plug Type	Part No.	Size (Lgth. Less Plug Pins)	Furnished Internal Structure
8-pin Octal	B-8	1-3/8"sq. x 2" long	None
8-pin Octal	B-10	1-3/8"sq. x 2½" long	None
8-pin Octal	B-10T	1-3/8"sq. x 2½" long	Turret w/ 12 Lugs
8-pin Octal	C-10	2" sq. x 2½" long	None
8-pin Octal	C-12T	2" sq. x 3" long	Turret w/ 12 Lugs



2" SQ. CASES WITH CRIMPED 8-PIN BAKELITE OCTAL PLUGS

Available Terminal Cards w/ O/A Hole Pattern & Mtd. Brackets

Part No.	O/A Lgth.	Large Holes (.093) Spaced .265x.265 Phenolic Material	Small Holes (.062) Spaced .1 x .2 Epoxy Glass Mat'l	Micro Holes (.042) Spaced .1 x .1 Epoxy Glass Mat'l
C-10-K1.02	2½"	None	None	None
C-12-K1.02	3"	511	514	514-1P

TUBE BASE PLUGS

Mica filled phenolic or white glass filled polyimide material for building miniature plug-in units. Plugs match standard tube base sockets and have tinned phosphor bronze pins for soldering components on upper end. Flange on plug body serves as "stop" and bonding point for covers if used. Pins on plug-in side are 17/64" long. Models with recessed knurled nuts are available -- write factory. *Plugs listed below do not have center post.*

No. Pins	Mica Filled Phenolic	Polyimide	Type	Key Way	Dimensions A	B	C
7	K1.313	—	7-pin Min. Straight Pins	No	3/16	.620	.575
7	K1.302	—	7-pin Min. Straight Pins	Yes	17/32	.620	.575
7	K1.334	—	7-pin Min. Hooked Pins	Yes	3/16	.620	.575
9	K1.413	K1.413B	9-pin Straight Pins	No	3/16	.750	.700
9	K1.402	—	9-pin Straight Pins	Yes	17/32	.750	.700
9	K1.434	—	9-pin Hooked Pins	Yes	3/16	.750	.700

TURRETS

Post and Socket Types

Compact wiring structures are ideal for mounting discrete components on minimum chassis space. Socket type has ½" dia. phenolic post attached to socket, and one or two rings of tinned lugs for soldering components. Post type mounts with 6-32 screw into recessed knurl nut inside turret, or with protruding 6-32 screw. Many other sizes and types available -- write factory.

Part No.	Mounting Style	Turret Height	No. Term.	No. Rings	Spacing Betw. Rings
8-0-9T	Octal Socket	2"	9	2	1"
10-0-9T	Octal Socket	2½"	9	2	1-3/8"
6-M-6T	7-pin Min. Skt.	1½"	6	1	—
8-M-9T	7-pin Min. Skt.	2"	9	2	1"
6-N-6T	9-pin Min. Skt.	1½"	6	1	—
8-N-9T	9-pin Min. Skt.	2"	9	2	1"
8-12	6-32 Screw/Nut	1-27/32"	12	2	1"
10-12	6-32 Screw/Nut	2½"	12	2	1-3/8"
6-H-12	6-32 Knurl Nut	1½"	12	2	7/8"
8-H-12	6-32 Knurl Nut	2"	12	2	1-3/8"

In the interest of improved design and performance, Vector reserves the right to make changes in its specifications without prior notice.

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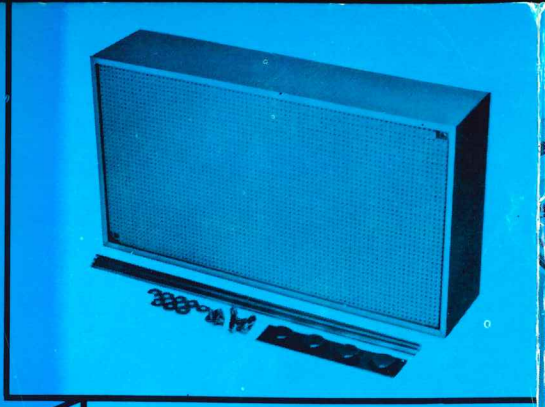

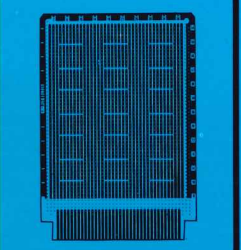

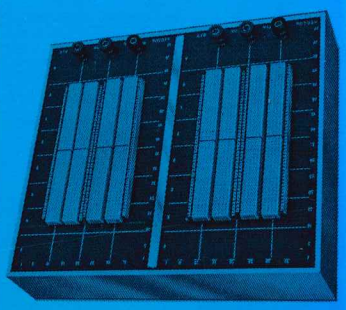

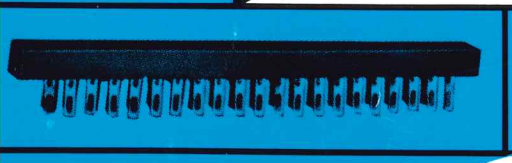

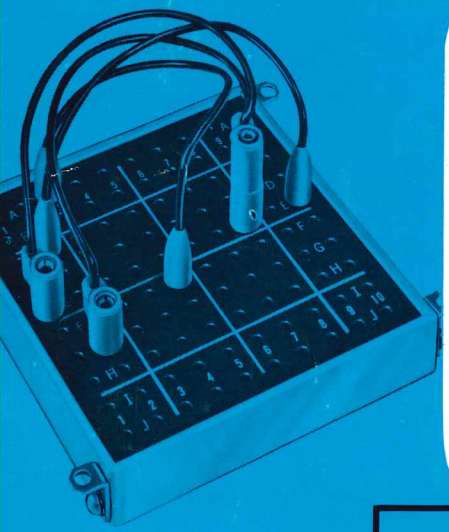

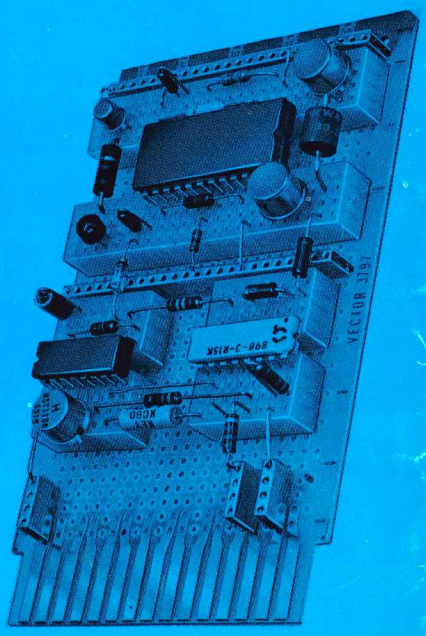

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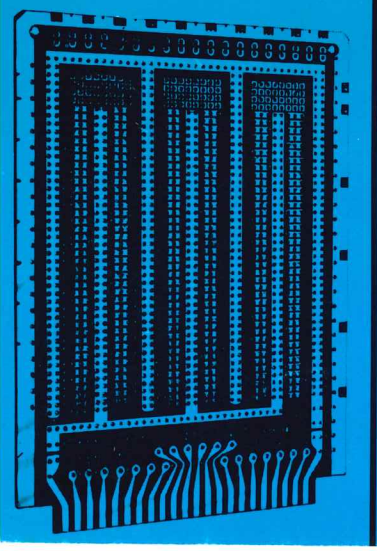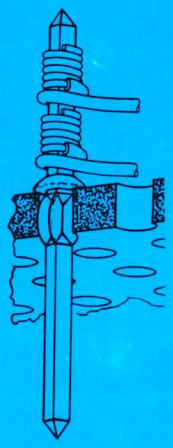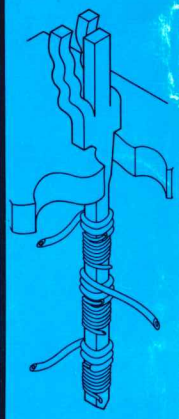
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